

## P A T E N T   C L A I M S

1. Hearing aid system for the in-situ fitting of hearing aids, said system comprising

a separate control device, and at least one  
5 hearing aid, adapted for communication with each other,  
said hearing aid comprising at least one microphone, a signal processor for generating an output signal to a receiver, and means for receiving control signals from the control device, and

10 said control device being in communication with said hearing aid during the in-situ fitting for the activation of generation of test signals, which test signals are delivered to said receiver and emitted therefrom as acoustic test signals,

15 wherein said hearing aid further comprises a switch means which when said hearing aid is in communication with the control device may optionally be switched between at least a first and a second position, said switch attenuating in the first position the  
20 output signal to the receiver using a voltage dividing resistor network, and said switch bypassing in the second position said voltage dividing resistor network so as not to influence the output signal to the receiver.

25 2. Hearing aid system according to claim 1, wherein said control device further supplies the power to the hearing aid when said control device being in communication to said hearing aid during the in-situ fitting.

30 3. Hearing aid system according to claim 1, wherein said control device is in communication with the hearing aid by means of a cordless connection.

4. Hearing aid system according to any one of claims 1, 2 or 3, wherein the hearing aid is a digital  
35 hearing aid.

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5. Hearing aid system according to any one of claims 1 to 4, wherein the voltage dividing network comprises at least two fixed value resistors.

6. Hearing aid system according to any one of 5 claims 1 to 5, wherein the output signal to the receiver is delivered by an digital/analogue converter.

7. Hearing aid system according to any one of claims 1 to 6, wherein the output signal to the receiver is delivered by a switching amplifier.

10 8. Hearing aid system according to any one of claims 1 to 7, wherein the output signal to the receiver is delivered by a bit-stream converter.

9. Hearing aid system according to any one of claims 1 to 8, wherein the output signal to the 15 receiver is delivered by a  $\Sigma$ - $\Delta$  converter.

10. Hearing aid system according to any one of claims 1 to 9, wherein the input signal for the receiver is tapped from the voltage dividing network.

11. Hearing aid according to any one of claims 8 20 or 9, wherein the supply voltage for the amplifier output stage is tapped from the voltage dividing network.

12. Hearing aid adapted for in-situ fitting, said hearing aid comprising at least one amplifier, 25 wherein said hearing aid comprises a first normal mode in which said amplifier operates in a first dynamic range between inherent amplifier noise and maximum output level, and

wherein said hearing aid comprises a second low 30 noise mode, achieved by shifting of the output level range of the first normal mode, thereby attenuating the inherent amplifier noise.

13. Hearing aid according to claim 12, wherein the attenuation is achieved by means of a voltage dividing 35 resistor network.

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14. Hearing aid according to claim 13, wherein the resistors of the resistor network have fixed values.

15. Hearing aid according to any one of claims 12 to 14, wherein the amplifier is a switch mode amplifier and attenuation is achieved by attenuation of the supply voltage for the amplifier output stage.

16. Hearing aid according to any one of claims 12 to 15, wherein the attenuation is achieved by attenuation output signal from the amplifier.

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